

## CLAIMS

1. A method pertaining to the combustion of a fuel with an oxidant in a heating furnace, wherein the fuel and the oxidant are delivered to a burner head, **characterized in that**  
5 in a first method step fuel and oxidant are caused to be emitted from the burner head (1; 10) in the close proximity of each other so that combustion will essentially be close to and at a small distance out from the burner head until there is reached in the furnace space a temperature that exceeds the spontaneous combustion temperature of the fuel; in that in a second method step the fuel and the oxidant are caused to be  
10 emitted instead from the burner head (1; 10) at a mutual distance apart so that combustion will essentially take place at a distance from the burner head corresponding to at least the diameter of the burner head and outwards from the burner.
- 15 2. A method according to claim 1, **characterized in that** in the first method step the fuel is caused to be emitted from a nozzle (2;11) in the burner head (1;10), and the oxidant is caused to be emitted concentrically (3) around said nozzle.
- 20 3. A method according to claim 1 or 2, **characterized in that** in said second method step the fuel is caused to be emitted from a nozzle (2;11) in the burner head and the oxidant is caused to be emitted through outlet openings (4,5;12-14) located on one side of and at a distance from said nozzle.
- 25 4. A method according to claim 3, **characterized by** placing said outlet openings (4,5;12-14) at a distance from the fuel nozzle (2;11) that exceeds half the diameter of the burner head (1;10).
- 30 5. A method according to claim 1,2,3 or 4, **characterized by** using a gaseous oxidant and causing the oxidant to have an oxygen content of 80 % or higher.
6. A method according to claim 5, **characterized by** delivering the oxidant at an overpressure of at least 2 bar.

7. A method according to any one of the preceding claims, **characterized by** using oil as the fuel.
8. A method according to any one of the preceding claims, **characterized by** using natural gas or propane as the fuel.
9. A burner for combusting fuel with an oxidant in a heating furnace, where the fuel and the oxidant are delivered to a burner head, **characterized in that** the burner head (1;10) includes a fuel supply nozzle (2;11); in that the burner head (1;10) also includes a first oxidant outlet opening (3) in the close proximity of the nozzle so that combustion will generally take place close to and at a small distance out from the burner head; in that the burner head also includes further oxidant outlet openings (4,5;12-14) that are located at a distance from the fuel nozzle (2;11) so that combustion will generally take place at a distance from the burner head corresponding to at least the diameter of the burner head and outward from the burner; and in that the burner is adapted to deliver the oxidant at an overpressure of at least 2 bar.
10. A burner according to claim 9, **characterized in that** said further outlet openings (4,5;12-14) are located on one side of and at a distance from said nozzle (2;11).
11. A burner according to claim 9 or 10, **characterized in that** said further outlet openings (4,5;12-14) are placed at a distance from the fuel nozzle (2;11) that exceeds half the diameter of the burner head (1;10).
12. A burner according to claim 9, 10 or 11, **characterized in that** the outlet openings (4, 5) are formed by Laval nozzles or venturi nozzles.